

REMARKS

Claims 1-19 are pending in the application. No claims are amended in the present reply. The Examiner is requested to reconsider and withdraw the rejections in view of the remarks contained herein.

1. REJECTION UNDER 35 U.S.C. § 102 – BOISSEAU

Claims 1-3 and 7-16 stand rejected under 35 U.S.C. § 102(b) as allegedly anticipated by Boisseau et al. (U.S. Pat. App. Pub. No. 2002/0155278) with "Reactive Polymers Fundamentals and Application A Concise Guide to Industrial Polymers," page 82 being cited as evidence. This rejection is respectfully traversed.

The present claims are not anticipated as the Boisseau reference does not provide a thermosetting coating composition that includes a "monomeric material having a plurality of active hydrogen groups," where the composition optionally comprises "a polymeric or oligomeric material." Instead, the film-forming component of Boisseau is either a polymeric or oligomeric material that is formed from a monomeric material. Interpretation of the present claim language, taken in view of the specification, and in comparison with the whole of the Boisseau disclosure, illustrates that the Boisseau reference lacks all of the claim features.

- 1.1 Anticipation requires that all of the elements and limitations of the claim must be shown in a single prior reference, arranged as in the claim.

"A rejection for anticipation under section 102 requires that each and every limitation of the claimed invention be disclosed in a single prior art reference." *In re Paulsen*, 30 F.3d 1475, 1478-79 (Fed. Cir. 1994); see *Karsten Manufacturing Corp. v. Cleveland Golf Co.*, 242 F.3d 1376, 1383 (Fed. Cir. 2001) ("Invalidity on the ground of 'anticipation' requires lack of novelty of the invention as claimed. . . . that is, all of the elements and limitations of the claim must be shown in a single prior reference, arranged as in the claim."). In the present case, independent claims 1, 13, and 16 include "at least one monomeric material having a plurality of active hydrogen groups . . . and optionally a polymeric or oligomeric material." The alleged anticipation turns on whether all of the claimed features are provided by the Boisseau reference.

1.2 Interpretation of the claims.

The first step is interpretation of Applicants' claims. For brevity, Applicants present the features of just claim 1:

A thermosetting coating composition comprising
at least one **monomeric material** having a plurality of **active hydrogen groups**,
at least one **crosslinker** reactive with the at least one monomeric material,
a **crystalline reaction product** of an amine and an isocyanate,
and
optionally a **polymeric or oligomeric material**.

Marked in bold are first instances of elements and limitations, as arranged in the claim, which have structural connotations. These separately recited features are just that – separate features. None are recited as being one in the same. See *In re Wilder*,

429 F.2d 447, 166 USPQ 545, 548 (C.C.P.A. 1970) (every limitation positively recited in a claim must be given effect in order to determine what subject matter that claim defines).

During prosecution, the claim, including all of its elements and limitations as arranged, is given the broadest reasonable interpretation that is consistent with the specification. “[C]laims must be read in view of the specification, of which they are a part. . . . [T]he specification is always highly relevant to the claim construction analysis. Usually it is dispositive; it is the single best guide to the meaning of a disputed term.” *Phillips v. AWH Corp.*, 415 F.3d 1303, 1313, 75 USPQ2d 1321, 1326 (Fed. Cir. 2005) (*en banc*). The separate recitation of “monomeric,” “polymeric,” and “oligomeric materials” in claim 1 presumes these are each different materials. This is borne out by the specification.

The present specification uses the terms “monomeric,” “polymeric,” and “oligomeric” in their conventional senses, as typically understood by a skilled artisan in the coating arts. These terms are used to distinctly refer to separate types of materials; e.g., page 2, lines 1-21; page 5, line 1 to page 11, line 17; page 18, line 14 to page 19, line 13; and see U.S. Pat. Nos. 5,693,724, 5,693,723, 5,639,828, 5,512,639, 5,508,379, 5,451,656, 5,356,669, 5,336,566, and 5,532,061, which are incorporated by reference as per page 1, lines 9-11; and see present Examples 4-6, which use a carbamate-functional monomer in conjunction with an acrylic polymer. Compare, for example, the aforementioned terms and usages with the standard chemistry definitions of “monomeric,” “polymeric,” and “oligomeric materials” as supplied with the Amendment filed September 18, 2009, as the meaning of a claim term may be defined by

implication, that is, according to the usage of the term in the context in the specification. See *Phillips v. AWH Corp.*, 415 F.3d 1303, 75 USPQ2d 1321 (Fed. Cir. 2005) (*en banc*). Instances and uses of the terms "monomeric," "polymeric," and "oligomeric" at the locations noted above comport with these standard definitions.

Consequently, the present claims and specification are referring to three distinct and different materials when reciting monomeric, polymeric, and oligomeric materials; i.e., a monomeric material is not a polymeric material or an oligomeric material.

1.3 The present claims were amended to differentiate the monomeric material from polymeric or oligomeric materials.

In the amendment accompanying the request for continued examination, dated September 18, 2008, the claim features "optionally a polymeric or oligomeric material" were added to independent claims 1, 13, and 16 in order to further distinguish the "monomeric material having a plurality of active hydrogen groups" from other materials. Patent claims are given their broadest interpretation consistent with the specification during prosecution in order to facilitate sharpening and clarifying the claims at the application stage. See *In re Yamamoto*, 740 F.2d 1569, 1571 (Fed. Cir. 1984) ("The PTO broadly interprets claims during examination of a patent application since the applicant may 'amend his claims to obtain protection commensurate with his actual contribution to the art.'" (citation omitted)). Thus the patent examiner and the applicant, in the give and take of rejection and response, work toward defining the metes and bounds of the invention to be patented. See *In re Zletz*, 893 F.2d 319, 321-22 (Fed. Cir.

1989) (the broadest reasonable construction of claims during examination serves to target ambiguities in claims at the time when the claims are readily amended).

Applicants submit that in the present case the separate recitation of monomeric, polymeric, and oligomeric materials within the claim serves to adequately distinguish the monomeric material from polymeric and oligomeric materials and that the usage in the specification and the general knowledge in the art establish that the monomeric material is not and cannot be a polymeric or oligomeric material. As such, Applicants submit that the concern of the Board of Appeals in the Decision dated July 18, 2008 and the concern of the Examiner with respect to the breadth of "monomeric material" is appropriately addressed. In particular, the "monomeric material" of claims 1, 13, and 16 is viewed by a skilled artisan as a wholly different material from a "polymeric or oligomeric material."

1.4 Interpretation of the Boisseau reference.

The next step in ascertaining anticipation is comparing the interpretation of Applicants' claim with the Boisseau reference. Boisseau provides coating compositions and coating methods having a film-forming component (a) and may include a component (a)(i) having a plurality of active hydrogen-containing functional groups and a curing agent/crosslinking agent (a)(ii). Abstract; and paragraphs [0022], [0048]-[0049], and [0099]. Notably, the only disclosed film-forming components (a) are polymeric or oligomeric components that generally comprise one or more compounds or components having a number average molecular weight of from 900 to 1,000,000, for

example. Boisseau paragraph [0048]. Examples of active hydrogen group containing polymer resins (as film-forming component (ai)) include the polymers listed in Boisseau paragraph [0051].

In particular, Boisseau discloses how to prepare polymers for use as the film-forming component (a). See Boisseau paragraph [0054]; see also paragraphs [0063] to [0098] for preferred carbamate functional polymers, polyester polymers, and polyurethane polymers. The only reference to monomers in Boisseau is in terms of using monomers to prepare one or more polymers or oligomers for use as the film-forming component (ai). See Boisseau paragraphs [0052], [0054], and [0055]. The use and context of the terms "polymer," "oligomer," and "monomer" in Boisseau are in accord with the general understanding of these terms in the art and a person of ordinary skill in the coating arts readily recognizes that Boisseau is referring to separate and different materials. The description of these materials and use of the associated terminology in Boisseau also comport with the definitions in the extrinsic sources provided in the amendment filed September 18, 2009. Thus, there is no confusion or overlap between a monomer and an oligomer in the Boisseau disclosure and the reference is referring to different materials and acknowledges them as such. There is no instance or implication in Boisseau that an oligomer refers to anything other than a low-molecular weight molecule formed from a few monomers; e.g., a few monomers react to form oligomers, but as such an oligomer can never be a monomer.

- 1.5 Boisseau is not anticipatory as the film-forming component (a) is not a monomeric material having a plurality of active hydrogen groups, as per claims 1, 13, and 16.

The present claims are novel over Boisseau as the disclosed coating having a (polymeric or oligomeric) film-forming component (a) and a rheology control agent (b) does not provide all the features of independent claims 1, 13, and 16. Namely, Boisseau lacks "at least one monomeric material having a plurality of active hydrogen groups . . . and optionally a polymeric or oligomeric material."

- 1.6 A "macromonomer" is not a monomeric material as claimed.

The Office Action dated September 29, 2009, on page 5, refers to "Reactive Polymers Fundamentals and Applications A Concise Guide to Industrial Polymers," page 82, for the definition of "macromonomer" as "a polymer that contains reactive groups." At the outset, Applicants' submit that the present claims do not even contain the term "macromonomer," and so its definition is not relevant. Applicants further submit that the reference pages are illegible as provided with the Office Action dated September 29, 2009, and the electronic copy posted on Private PAIR is likewise illegible. Hence, Applicants are left to base the following remarks solely on the Examiner's quotation from the reference and Applicants request that the Examiner provide a legible copy as proper support.

The Examiner alleges that the Boisseau disclosure of polymeric or oligomeric film-forming component (a) accounts for the presently claimed monomeric material. As best can be understood, the Examiner's reasoning is as follows. First, the Examiner alleges the Boisseau film-forming component (a) is a "macromonomer," which by the very definition supplied is "a *polymer* that contains reactive groups" (emphasis added). Second, the Examiner alleges that "macromonomer" is also a "monomer" due to the root of the word itself.

This series of unreasonable interpretations is a non sequitur. The conclusion that a "macromonomer," which according to the very definition supplied is "a polymer," is somehow also now a "monomer" due to the root of the word "macromonomer" is unexplainable, is not reasonable, does not comport with any conventional interpretation in the art, and such a view is not commensurate with the usage of monomer, oligomer, and polymer as found in the present specification, as found in the Boisseau reference, and as found in the general knowledge in the art.

According to the Examiner's reasoning, a polymer is a monomer.

As evidence that such reasoning is contrary to the plain meaning and generally accepted knowledge in the chemical and coating arts, Applicants again proffer the standard chemistry definitions of "monomeric," "polymeric," and "oligomeric materials" as supplied with the Amendment filed September 18, 2009. A polymer is not generally considered a monomer, and the present use of "monomer" is never as a "polymer," either in the present specification or in Boisseau.

Even if, for the sake of argument, someone unfamiliar with the chemical arts makes the conjecture that appearance of the terms "polymer" and "monomer" in a claim

would somehow allow for an instance where the "polymer" is a "monomer," based on the Examiner's cited reference, such a view is at odds with the evidence at hand. If extrinsic reference sources, such as dictionaries, evidence more than one definition for the term, the intrinsic record must be consulted to identify which of the different possible definitions is most consistent with applicant's use of the terms. *Brookhill-Wilk* 1, 334 F.3d at 1300, 67 USPQ2d at 1137; see also *Renishaw PLC v. Marposs Societa' per Azioni*, 158 F.3d 1243, 1250, 48 USPQ2d 1117, 1122 (Fed. Cir. 1998) ("Where there are several common meanings for a claim term, the patent disclosure serves to point away from the improper meanings and toward the proper meanings.") (emphasis added). In this case, the most relevant disclosure is Applicants' specification, which never posits that a polymer is a monomer, and the second relevant disclosure is Boisseau, which never posits that a polymer is a monomer. This leaves the Examiner's cited definition for a term not used in either the claims or specification, and which is inconsistent with the sources that matter.

There is no confusion or contradiction between the terms "polymer," "oligomer," and "monomer" in the present claims, specification, and Boisseau. The only contradiction is the Examiner's contortion of "macromonomer," a term not used, to somehow make the polymeric or oligomeric film-formers of Boisseau be something they are not.

1.7 Viewing the claimed monomeric material as embodying the polymeric/oligomeric material of Boisseau is unreasonable.

During patent examination, claims may only be interpreted as broadly as their terms reasonably allow. The operative word is *reasonably*, and it is unreasonable to interpret the claim terms in contravention to their accepted meanings in the art and their use in the present specification as well as their use in the art being applied. The Examiner's inference that the oligomers or polymers of Boisseau are "macromonomers" and somehow qualify as "monomers" is without merit. Notably, the term "macromonomer" is absent in the present specification and Boisseau, and making a "polymer" be a "monomer" is at odds with examples and usage the terms "polymer," "oligomer," and "monomer" in the present specification and Boisseau. For example, Boisseau explicitly illustrates how oligomers and polymers are formed from monomers. The resulting oligomers and polymers are never then referred to as "monomers." It is improper to import alternative meanings for claim terms where there is no ambiguity in the present specification, and where, as in this case, there is no ambiguity in interpreting the terms as used in Boisseau.

An example of an unreasonable interpretation of claims in the chemical arts was recently illustrated by *In re Buszard*, 504 F.3d 1364 (2007), Case No. 2006-1489 (Fed. Cir., Sept. 27, 2007), where the Federal Circuit found the claim interpretation unreasonable and the claims not anticipated. The patent applicant claimed a composition that produces a flexible polyurethane foam. *Buszard* 2006-1489, page 2. The Board and examiner held the claim anticipated by any reaction mixture which produces, at least ultimately, a flexible polyurethane foam. *Buszard* 2006-1489, page 3. The cited reference disclosed a rigid polyurethane foam which when mechanically crushed loses its rigidity because it is in small particles. *Buszard* 2006-1489, page 3.

However, the applicant argued that the rigid foam product is chemically different from a flexible polyurethane foam and that this difference is readily understood by a person of ordinary skill. *Buszard* 2006-1489, pages 3-4. The court held that "[n]o matter how broadly 'flexible foam reaction mixture' is construed, it is not a rigid foam reaction mixture" and "it is not a reasonable claim interpretation to equate 'flexible' with 'rigid,' or to equate a crushed rigid polyurethane foam with a flexible polyurethane foam. *Buszard* 2006-1489, page 5.

By analogy, in the present case, it is unreasonable to equate "monomer" with "macromonomer" (defined as a *polymer* that contains reactive groups) and further simply default the "macromonomer" to equate to a "monomer," due to the root of the word. This is especially true in view of the present claims that simultaneously include and separately recite "monomeric material" and "polymeric or oligomeric material." One can not subsume the "monomeric material" to be a "polymeric material," just as flexible foam is not rigid foam.

The claim interpretation in the present rejection does not constitute the broadest *reasonable* interpretation.

1.8 The rejection fails to properly view Applicants' specification as a whole.

The present rejection is further flawed by relying on a single sentence of Applicants' specification in isolation. Instead of interpreting each and every claim feature in view of the whole of the specification, the rejection discounts the separate recitation of both "monomeric material" and "polymeric or oligomeric material" within the

claims themselves and their use throughout the specification, and instead interprets "monomeric material" using the single sentence at page 10, lines 4-5, taking this sentence entirely out of context. The whole of the paragraph is reproduced below, with the subject sentence in bold:

In a preferred embodiment, the monomeric material may be a material as described in Ohrbom et al., U.S. Pat. No. 6,541,594, filed Dec. 19, 2000 and issued Apr. 1, 2003, incorporated herein by reference. The clearcoat coating composition particularly includes a carbamate-functional material having at least two carbamate groups, preferably two to four carbamate groups, and more preferably two carbamate groups and a hydrocarbon moiety with about 24 to about 72 carbon atoms, preferably about 36 to about 72 carbon atoms, and more preferably about 36 to about 54 carbon atoms, and particularly preferably about 36 carbon atoms. The hydrocarbon moiety may include cycloaliphatic or aromatic structures. Such materials may be prepared, for example, by addition reaction of unsaturated monofunctional fatty acids having 12 to 18 carbon atoms according to known methods, followed by conversion of the acid group to a carbamate group. The unsaturated fatty acids may be dimerized, trimerized, or tetramerized. **Higher oligomer products are also possible, but not preferred.** The acid groups may be converted to carbamate or urea groups by a number of known means. For example, the acid may be reduced to an alcohol group and then the alcohol group reacted with a hydroxy carbamate or urea compound such as hydroxypropyl carbamate or hydroxyethylene ethyl urea to introduce the carbamate functionality. Another method of synthesis involves reaction of an hydroxyl group with cyanic acid (which may be formed by the thermal decomposition of urea). Hydroxyl groups can also be converted to carbamate groups by reaction with low molecular weight monoisocyanates (e.g., methyl isocyanate, ethyl isocyanate, propyl isocyanate, and butyl isocyanate). An hydroxyl group can also be reacted with phosgene and then ammonia or a primary amine to form a carbamate group.

Most notably, "oligomer products" in the subject sentence is *not* referring to oligomers of the claimed monomeric material, it is referring to the preceding sentence describing that "[t]he unsaturated fatty acids may be dimerized, trimerized, or tetramerized." For example, individual fatty acids do not have a plurality of active

hydrogen groups, as does the presently claimed monomeric material; i.e., they cannot be the claimed monomeric material having a plurality of active hydrogen groups. Subsequent addition reaction products of the fatty acids therefore cannot constitute "oligomeric" variants of the claimed monomeric material or vice versa.

The claimed monomeric material does not embody (the separately recited and illustrated) oligomeric material. Formation of the monomeric material from addition reaction of multiple fatty acids produces a monomeric material having a plurality of active hydrogen groups, where the acid groups can be converted to carbamate groups, for example. Present specification page 10, lines 5-6, and see structures on page 11. These structures are not a series of a few repeating units and the individual "units" of fatty acids do not each have a plurality of active hydrogen groups, as required by the claimed monomeric material. Instead, only the structures from the addition reaction of multiple fatty acids provide two to four radiating acid groups that are converted to carbamate groups, forming a monomeric material having a plurality of active hydrogen groups. In other words, there are no constitutional monomer units identifiable in such structures, as compared to oligomers illustrated in Boisseau, and the fatty acids each do not have a plurality of active hydrogen groups; i.e., individually they cannot be the claimed monomeric material.

Thus, the quoted passage – "higher oligomer products are also possible, but not preferred" – is solely referring to the "oligomer products" of the unsaturated fatty acids reacted via addition reaction to cycloaliphatic or aromatic structures to form the monomeric material; i.e., the dimers, trimers, or tetramers in the preceding sentence. Exemplary structures of such materials are shown in paragraph [0021], page 11; and

see Ohrbom et al., U.S. patent 6,541,594, as incorporated by reference, at col. 5, lines 34-45 and col. 6, line 44 to col. 8, line 25. These are also not oligomers as described and provided by Boisseau, just as the decahydronaphthalene portion of the structures shown in present claims 17-19 would not be considered to present a "hexane dimer." Consequently, "oligomer products" as found at page 10, lines 4-5 is not used in reference to oligomers of the claimed monomeric material, but is referring to additions of the unsaturated fatty acids to the hydrocarbon moiety to form an exemplary monomeric material. As shown in claims 17-19, the acid groups of the fatty acid addition product can be converted to form a plurality of carbamate groups. Page 10, lines 5-15.

The manner in which the Examiner is interpreting the quoted passage is in isolation and is not in agreement with the immediately preceding sentence, is not in agreement with the remainder of the paragraph, and is not in agreement with the specification viewed as a whole. Individual fatty acids cannot constitute the presently claimed monomeric material having a plurality of active hydrogen groups, and addition reaction thereof does not result in an "oligomer" of the presently claimed monomeric material.

1.9 Limitations from the specification cannot be read into the claims.

On pages 4 and 5 of the Office Action dated March 20, 2009, it is stated that the specification includes polymeric substances among the instantly claimed "monomeric materials" and therefore the Examiner concludes that the claimed "monomeric material" includes oligomeric or polymeric materials.

Such a conclusion is contrary to established precepts of claim interpretation. First, Applicants' claims are presented as open-ended with the transition phrase "comprising," which permits additional components beyond the claimed "monomeric material." Second, Applicants' claims explicitly include "optionally a polymeric or oligomeric material" in addition to the explicitly claimed "monomeric material." Thus, there is no reason to interpret the "monomeric material" as also encompassing polymeric or oligomeric material. Such an interpretation does not logically follow from the plain language of the claim in the first place, nor is it consistent with the specification.

Consequently, it is improper to require the claimed "monomeric material" to embody the polymeric or oligomeric materials provided in the specification.

In sum, the terms "polymeric," "oligomeric," and "monomeric" are used separately and distinctly and refer to different materials. Never is an oligomer described as a monomer or "macromonomer;" such an inference is without support and is contrary to usage in both the specification and the cited Boisseau reference. The Boisseau composition cannot anticipate the present invention as it fails to include "at least one monomeric material having a plurality of active hydrogen groups . . . and optionally a polymeric or oligomeric material." Since independent claims 1, 13, and 16 are not anticipated, all dependent claims stemming therefrom are not anticipated. Withdrawal of the rejection and reconsideration of the claims are requested.

2. REJECTION UNDER 35 U.S.C. § 103 – BOISSEAU IN VIEW OF GREEN AND OHRBOM

Claims 1-16 stand rejected under 35 U.S.C. § 103(a) as allegedly unpatentable over Boisseau et al. (U.S. Pat. App. Pub. No. 2002/0155278) in view of Green et al. (U.S. Pat. No. 5,872,195) and Ohrbom et al. (U.S. Pat. No. 5,756,213) with "Reactive Polymers Fundamentals and Applications A Concise Guide to Industrial Polymers", page 82 cited as evidence. This rejection is respectfully traversed.

As detailed in traverse of the 102 rejection above, the Boisseau reference fails to teach a coating composition having at least one monomeric material that has a plurality of active hydrogen groups. Addition of the Green and Ohrbom references fails to cure this deficiency. Since the combination must teach all of the claim limitations or provide an apparent reason to include the missing subject matter, the present claims are not obvious. In particular, there is no apparent reason or basis in the combination of references to replace the film-forming component (i.e., the polymeric or oligomeric resin of Boisseau) with a monomeric material to make a coating composition with at least one monomeric material having a plurality of active hydrogen groups. These references do not appreciate use of the monomeric material as found in the present application and, in fact, the Boisseau polymers or oligomers would actually lead a skilled artisan away from using a monomeric material.

With respect to Boisseau, the shortcomings of the reference are illustrated in the preceding section. Likewise, the rejection's basis for interpreting the oligomer of Boisseau as a "macromonomer" is irrelevant as this term appears nowhere in the art of record and the associated reasoning contravenes the separate recitation and use of "monomer" and "oligomer," as illustrated by the present application and the cited

references. Finally, as illustrated above, reliance on page 10, lines 4-5 of the present specification in isolation as allegedly teaching that the claimed monomeric material is the same as an oligomer disclosed in Boisseau is flawed.

With respect to Ohrbom, the reference describes a compound (A) that has a carbamate or urea functionality where a compound (A)(1) having a carbamate or urea group and a hydroxyl group is reacted with a compound (A)(2) which may be a dialkyl carbonate, cyclic carbonate, or CO₂. Reaction of (A)(1) with (A)(2) will result in a compound having the residues of two (or more) (A)(1) compounds linked together by a carbonate group formed from the residue of compound (A)(2). With inclusion of a polyol, a polycarbonate compound can be formed. Ohrbom col. 2, lines 19-34; see also col. 7, lines 52-67. Thus, at least two (A)(1) compounds are joined by an (A)(2) compound (i.e., at least two (A)(1) subunits/monomers are joined) and/or a polycarbonate polymer is formed. As a result, Ohrbom does not disclose a non-polymeric coating composition having a monomeric material as described in the present invention.

With respect to Green, the reference discloses a curable coating composition having a polymer resin, curing agent, and a compound (c) having at least one carbamate group that is the reaction product of a hydroxyl group from a ring-opening reaction between an epoxy group and an organic acid group, and cyanic acid or a carbamate group. Green claim 1; abstract; col. 2, lines 1-11; and col. 5, lines 28-36. Thus, Green describes a polymeric coating composition where a polymer resin with active hydrogen-containing functional groups reacts with a curing agent. The Green polymeric coating composition further contains a carbamate compound (c) that contains

at least one carbamate group, but the primary film-forming component of Green is the polymer resin, examples of which are listed in col. 2, lines 14-27.

The background of Green indicates that curable coating compositions utilizing carbamate-functional resins provide significant etch advantages. However, there is no suggestion or motivation that a skilled artisan would gather from the combination of Green, Boisseau, and Ohrbom that would lead to a coating composition having a monomeric material having a plurality of active hydrogen groups. In each reference (Green, Boisseau, and Ohrbom), the respective coating compositions contain a polymeric resin (Green), a film-forming component (Boisseau), or at least two of the same compound linked that can further include polycarbonates (Ohrbom), where each in turn reacts with a crosslinker.

In addition, compound (c) of the Green reference contains "at least one carbamate" group while the present invention describes a monomeric material having a "plurality of active hydrogen groups," which can be carbamate groups. A "plurality of active hydrogen groups" in the present invention requires at least two such groups. See, for example, paragraph [0024] illustrating various embodiments of the monomeric material having two carbamate groups; and see paragraph [0017] describing embodiments of the monomeric material comprising "at least two functional groups." The difference between having one carbamate group and two carbamate groups is important in the curing of a coating composition. For example, all three of the cited references contain other polymeric resins that react with a crosslinker to form a polymerized cured coating. In contrast, the present invention does not require a polymeric resin that reacts with a crosslinker.

The carbamate compound (c) from Green is further differentiated from the monomeric material of the present invention in that since compound (c) can have just one carbamate group, it would then react with a crosslinker at only the single carbamate moiety. As such, the cured coating composition in Green would be very different from the cured coating composition of the present invention where a non-polymeric coating composition having a monomeric material with a plurality (i.e., at least 2) of active hydrogen groups reacts with a crosslinker.

Thus, the present invention identifies and utilizes a specific species of carbamate containing compounds (e.g., monomeric materials having at least two carbamates). A monomeric material having a single carbamate group would not function in a similar fashion and is not included in the presently claimed invention. Therefore, the monomeric material having a plurality of active hydrogen groups would not have been obvious in the combination of the aforementioned references, since each of the references contains a separate polymeric resin which can react with a crosslinker to provide a polymerized and cured coating. Addition of a single carbamate containing compound (c) from the Green reference can react with a crosslinker, but cannot participate in the same type of curing reaction as can the monomeric material having a plurality of active hydrogen groups of the present invention.

No apparent reason or basis is identified as to why a skilled artisan would use a monomeric material with a plurality (at least two) of reactive hydrogen groups in a coating composition based on the cited references. The present invention is therefore not obvious. Withdrawal of the rejection and reconsideration of the claims are requested.

3. REJECTION UNDER 35 U.S.C. § 103 – OHRBOM '253 IN VIEW OF BOISSEAU

Claims 1-19 stand rejected under 35 U.S.C. § 103(a) as allegedly unpatentable over Ohrbom et al. (U.S. Pat. App. Pub. No. 2002/0119253; hereinafter Ohrbom '253) in view of Boisseau et al. (U.S. Pat. App. Pub. No. 2002/0155278). This rejection is respectfully traversed.

Claims 1-19 are patentable over the combination of Ohrbom '253 and Boisseau as there is no apparent reason for a person of ordinary skill to select and combine features of these references in a manner that would reproduce Applicants' claims. In particular, Applicants' claims expressly require "a crystalline reaction product of an amine and an isocyanate," whereas the coating of Ohrbom '253 expressly does *not* contain a crystalline solid, effectively teaching away from Applicants composition. Any combination of Ohrbom '253 with Boisseau by a person of skill in the art would therefore avoid crystalline materials, as mandated by Ohrbom '253. And there is no basis provided in the references or the general knowledge in the art for a skilled artisan to contravene the teachings of Ohrbom to include a crystalline material. Finally, the fact that features of Applicants' claims are simply known in the art cannot form a case of obviousness, there must be a reason to combine the features as per the present claims, there must be a reason to contravene the teachings of Ohrbom '253, and the function of the alleged combination must also be predictable to one of skill in the art. The present rejection consequently fails to provide the explicit and requisite analysis to establish a case of obviousness.

Obviousness requires an apparent reason for a skilled artisan to combine

features of prior art references. *KSR Int'l Co. v. Teleflex Inc.*, 127 S.Ct. 1727, 1734, 82 USPQ2d 1385, 1391 (2007) (An obviousness inquiry includes determining "whether there was an apparent reason to combine the known elements in the fashion claimed by the patent at issue."). The basis for the combination may be found in the references themselves or in the general knowledge in the art. However, the apparent reason to combine or modify the references should be made explicit in order to facilitate review. *KSR Int'l Co. v. Teleflex Inc.*, 127 S.Ct. at 1740-41, 82 USPQ2d at 1396; and see *In re Kahn*, 441 F3d 977, 988, 78 USPQ2d 1329, 1336 (Fed. Cir. 2006) ("[R]ejections on obviousness grounds cannot be sustained by mere conclusory statements; instead, there must be some articulated reasoning to support the legal conclusion of obviousness.").

In the present case, the alleged reasoning to combine Ohrbom '253 and Boisseau appears in the sentence on page 10 of the Office Action dated March 20, 2009, spanning line 6 down to line 16. As best can be ascertained, it appears that the rejection alleges the crystalline reaction product of an amine and an isocyanate (as per Boisseau) would be combined with the coatings discussed in Ohrbom '253, which can include the monomeric materials having a plurality of active hydrogen groups (as per present claims 17-19). It is alleged that the crystalline reaction product would be expected to provide antisag properties and rheology control, as described by Boisseau.

The primary reference of Ohrbom '253 discloses coating compositions that contain reactive component (a), which is substantially free of heteroatoms and is notably *not* a crystalline solid at room temperature, in conjunction with a particular crosslinking agent (b). Ohrbom '253 abstract; and paragraphs [0013]-[0014], and

[0017]. "'Crystalline' refers to a solid characterized by a regular, ordered arrangement of particles. Rather, reactive component (a) will be an amorphous solid, a wax or a liquid at room temperature. 'Amorphous' refers to a noncrystalline solid with no well-defined ordered structure." Ohrbom '253 paragraph [0021]. Examples of reactive components (a) include the structures shown in Ohrbom '253 paragraph [0042]. Crosslinking agent (b) must have a plurality of functional groups reactive with functional groups of reactive component (a). Ohrbom '253 paragraph [0017]. The coatings provide good environmental etch resistance and have an increased nonvolatile or decreased volatile organic content at a sprayable viscosity. Ohrbom '253 paragraph [0012]. Thus, the Ohrbom coating composition expressly does not include crystalline material, unlike the present claims that require a crystalline reaction product of an amine and an isocyanate.

Details of the Boisseau disclosure are illustrated in the preceding sections and in Applicants' previous replies. Briefly, Boisseau provides a coating for both vertical and horizontal surfaces. The coating composition includes a film-forming component (a) and a rheology control agent (b) having microparticles (i) and a compound (ii) comprising the reaction product of an amine and an isocyanate. Boisseau paragraph [0019]. The film-forming component (a) is polymeric or oligomeric, having a number average molecular weight of from 900 to 1,000,000, for example. Boisseau paragraph [0048]. The balance of vertical sag control and horizontal flow is believed to result from the combination of the microparticles (i) and the compound (ii) comprising the reaction product of amine and isocyanate in the rheology control agent (b). Boisseau paragraph

[0023]. The rheology control agent (b) provides improvements unattainable when either the microparticles (i) or the compound (ii) are used alone. Boisseau paragraph [0023].

Regardless of the reason a skilled artisan might combine Ohrbom '253 and Boisseau (Applicants do not admit that a reason even exists), any collective coating composition must account for the whole teachings of the primary reference of Ohrbom '253 and the express requirement that a crystalline material *not* be used. Aspects of the properties and/or benefits provided by the Ohrbom '253 disclosure would likely be lost if a crystalline material is employed. As such, a person of ordinary skill would be led away from Applicants' claims by the Ohrbom '253 disclosure and would not combine features of Ohrbom '253 and Boisseau in a manner that would produce the present claims.

In addition, as recognized in the MPEP, "[t]he mere fact that references *can* be combined or modified does not render the resultant combination obvious unless the results would have been predictable to one of ordinary skill in the art." MPEP 2143.01.III (emphasis in original). There is no basis for such predictability found either in the cited references or provided based on the general knowledge in the art. And a statement that modifications of the prior art to meet the claimed invention would have been "well within the ordinary skill of the art at the time the claimed invention was made," merely because elements of the claimed invention were individually known in the art, is not sufficient to establish a *prima facie* case of obviousness without some objective reason to combine the teachings of the references. *Ex parte Levengood*, 28 USPQ2d 1300 (B.P.A.I. 1993). Here, there is no apparent reason found in the cited references or based on the general knowledge in the art that would lead a skilled artisan

to predict that using a crystalline material (from Boisseau) in a composition according Ohrbom '253 would be successful, especially since crystalline materials are identified as verboten by Ohrbom. Accordingly, the present claims are not obvious over the reference combination.

Ohrbom '253 and Boisseau therefore cannot establish a case of obviousness. Accordingly, Applicants request reconsideration of the claims and withdrawal of the rejection.

4. CONCLUSION

It is believed that all of the stated grounds of rejection have been properly traversed, accommodated, or rendered moot. Applicant therefore respectfully requests that the Examiner reconsider and withdraw all presently outstanding rejections. It is believed that a full and complete response has been made to the outstanding Office Action and the present application is in condition for allowance. Thus, prompt and favorable consideration of this amendment is respectfully requested. If the Examiner believes that personal communication will expedite prosecution of this application, the Examiner is invited to telephone the undersigned at (248) 641-1600.

Respectfully submitted,

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